



E731  
JACC March 12, 2013  
Volume 61, Issue 10

## Heart Failure

### HEART FAILURE AS A RISK FACTOR FOR DIABETES MELLITUS

Poster Contributions

Poster Sessions, Expo North

Sunday, March 10, 2013, 3:45 p.m.-4:30 p.m.

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Session Title: Role of Comorbidities in Heart Failure: From Diabetes, Pulmonary Disease, Hypertension to Atrial Fibrillation

Abstract Category: 15. Heart Failure: Clinical

Presentation Number: 1263-283

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**Background:** It is well known that diabetes mellitus (DM) is a risk factor for many cardiovascular diseases including heart failure (HF). Recently, it was suggested that reverse is also true, and HF precipitates progression of DM

**Methods:** The Cardiovascular Health Study (CHS) is a cohort study of cardiovascular disease risk in ambulatory older adults, sponsored by the NHLBI. For this study, we used limited access dataset from the study. Presence of both DM and HF was recorded in all participants at the baseline and several years later. We excluded participants who had DM at baseline. Remaining subjects were divided into those who had HF at enrollment and those who did not. The incidence of new onset DM was compared in the two groups. Fisher's exact test was used for comparison. Multiple logistic regression was then used to check for effects of potential confounders.

**Results:** Original and additional cohorts of the CHS combined consisted of 5888 individuals. After those with known DM were removed, there were 4786 participants left. Of those, 3653 did not have HF at baseline, and 95 did have HF. In three or four years, for the original cohort and additional cohort, respectively, 152 individuals developed new onset DM. Out of 3653 participants who did not have HF at baseline, 142 (3.9%). Out of 95 participants who had HF at baseline, 10 developed diabetes (10.5%). Without considering possible confounders, presence of HF at time of inclusion into the CHS study was associated with development of DM after 3 or 4 years (OR = 2.01, 95% CI = 1.48 - 5.72, p=0.005). This association was independent of baseline cardiovascular heart disease factors such as myocardial infarction, stroke, or angina, and also independent of age, education, gender, race that are known to be associated with diabetes (p=0.008)

**Conclusions:** In elderly population, heart failure is a risk factor for new onset diabetes mellitus. Presence of HF doubles the chances of development of incident diabetes within few years. This association remains significant after adjustment for age, gender, overall health status, and specific cardiovascular comorbidities such as ischemic heart disease or stroke.